

Notice of Allowability

Application No.

10/775,154

Examiner

Maria Veronica D. Ewald

Applicant(s)

OLARU, GEORGE

Art Unit

1722

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 8/22/06.
2. ☒ The allowed claim(s) is/are 1-15 and 19-22.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date 8/22/06
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____.
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

Allowable Subject Matter

Claims 1 – 15 and 19 – 22 are allowed. The following is an examiner's statement of reasons for allowance: The closest prior art references of Gellert (U.S. 5,049,062) and Schad (U.S. 4,682,945) fail to teach a seal located at an interface between the manifold member and the nozzle member, the seal having a seal melt channel communicating at a first end with the manifold melt channel and at a second end with the nozzle melt channel for receiving the melt stream from the manifold melt channel and delivering the melt stream to the nozzle melt channel; and a biasing *element in contact with the nozzle member and the seal to maintain a continuous sealing pressure between the manifold member and the seal independent of injection pressure*. In addition, both references fail to teach *a biasing element positioned between said nozzle and said seal that continuously biases said seal against said manifold to provide sealing contact between said seal and said manifold to maintain a sealed path between said manifold melt channel and said nozzle melt channel*. Furthermore, the references fail to teach a biasing element that makes *a first contact with the nozzle head portion and a second contact with the seal to provide a sealing between the seal and the manifold and fail to teach a seal including an annular sealing portion having an integral biasing element radially extending therefrom, the biasing element being positioned between the nozzle and the manifold such that an upper end of the annular sealing portion is received within the manifold annular slot and a lower end of the annular sealing portion is slidable within the nozzle melt channel to position a seal melt channel between the*

Art Unit: 1722

manifold channel outlet and the nozzle melt channel, and wherein the biasing element deforms to accommodate movement of the annular sealing portion relative to the nozzle and the manifold.

With respect to the reference of Gellert, Gellert teaches a seal housing located at an interface between the manifold member and the nozzle member and a biasing element; however, *the biasing element does not contact both the nozzle member and the seal; the biasing element only contacts the seal.* In addition, *the biasing element does not maintain continuous sealing pressure independent of injection pressure nor continuously biases the seal against the manifold to provide sealing contact between the seal and the manifold.* As pressurized melt flows through the bore of the nozzle, the force of the melt against the tapered end of the nozzle is sufficient to overcome the bias of the springs and forces the nozzles in the retracted open position. Once the cavities are filled, the melt pressure is released and the springs drive the nozzles forward to close the gate to the cavities. Thus, the springs do not maintain continuous sealing pressure independent of injection pressure. Furthermore, the biasing element *does not make a first contact nor any contact with the nozzle head portion.* The biasing element sits within the seal housing and only contacts the seal housing. In addition, *the manifold of Gellert does not have an annular slot such that the seal is positioned or received within the manifold annular slot.* The manifold of Gellert is flush with the seal housing.

With respect to the reference of Schad, Schad teaches a seal, formed of an innular tubular element surrounded by a biasing/sealing element, which has a thermal expansion coefficient, allowing it to act spring-like. The inner tubular element seals the

Art Unit: 1722

manifold from any leaking melt while, the biasing element responds when the manifold is heated to seal the floating manifold between the mold plates and also insulates the mold cavity. However, the biasing element *does not make a first contact nor any contact with the nozzle head portion*. In addition, the biasing element only responds due to the heat of the manifold and *does not maintain a continuous sealing pressure between the manifold member and the seal*. The biasing element sits within the mold abutment and only contacts the seal. In addition, *the manifold of Schad does not have an annular slot such that the seal is positioned or received within the manifold annular slot*. The manifold of Schad is flush with the inner tubular element.

Thus, prior art fails to teach the following: An injection molding apparatus comprising: a manifold member having a manifold melt channel for delivering a melt stream of moldable material through an outlet thereof; a nozzle member having a nozzle melt channel for delivering the melt stream to a mold cavity; a seal located at an interface between the manifold member and the nozzle member, the seal having a seal melt channel communicating at a first end with the manifold melt channel and at a second end with the nozzle melt channel for receiving the melt stream from the manifold melt channel and delivering the melt stream to the nozzle melt channel; and a biasing element in contact with the nozzle member and the seal to maintain a continuous sealing pressure between the manifold member and the seal independent of injection pressure; An injection molding apparatus comprising: a manifold having a manifold melt channel for receiving a melt stream of moldable material; a nozzle having a nozzle melt

Art Unit: 1722

channel; a seal having a seal melt channel located between the nozzle melt channel and the manifold melt channel for delivering melt from said manifold melt channel to said nozzle melt channel; and a biasing element positioned between said nozzle and said seal that continuously biases said seal against said manifold to provide sealing contact between said seal and said manifold to maintain a sealed melt path between said manifold melt channel and said nozzle melt channel; An injection molding apparatus comprising: a manifold having a manifold melt channel for receiving a melt stream of moldable material; a nozzle having a nozzle melt channel and a nozzle head portion; a seal having a seal melt channel located between the nozzle melt channel and the manifold melt channel; and a biasing element that makes a first contact with the nozzle head portion and a second contact with the seal to provide a sealing force between the seal and the manifold; And an injection molding apparatus comprising: a manifold having a manifold melt channel for receiving a melt stream of moldable material, the manifold melt channel having an outlet positioned within an annular slot of in the manifold; a nozzle having a nozzle melt channel for receiving the melt stream from the manifold melt channel; and a seal including an annular sealing portion having an integral biasing element radially extending therefrom, the biasing element being positioned between the nozzle and the manifold such that an upper end of the annular sealing portion is received within the manifold annular slot and a lower end of the annular sealing portion is slidable within the nozzle melt channel to position a seal melt channel between the manifold channel outlet and the nozzle melt channel, and wherein

Art Unit: 1722

the biasing element deforms to accommodate movement of the annular sealing portion relative to the nozzle and the manifold.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

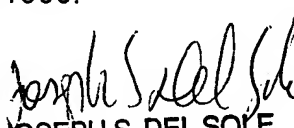
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Maria Veronica D. Ewald whose telephone number is 571-272-8519. The examiner can normally be reached on M-F, 8 - 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dr. Yogendra Gupta can be reached on 571-272-1316. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1722

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MVE


JOSEPH S. DEL SOLE
PRIMARY EXAMINER
10/12/06